Eral Edree – Numerical Optimization in Python – python ex2.
Link to github repo: https://github.com/ErelEdree/numerical_optimization_exercise_2

Test_QP:

QP solution: [4.99999850e-01 5.00000150e-01 7.09945318e-15]

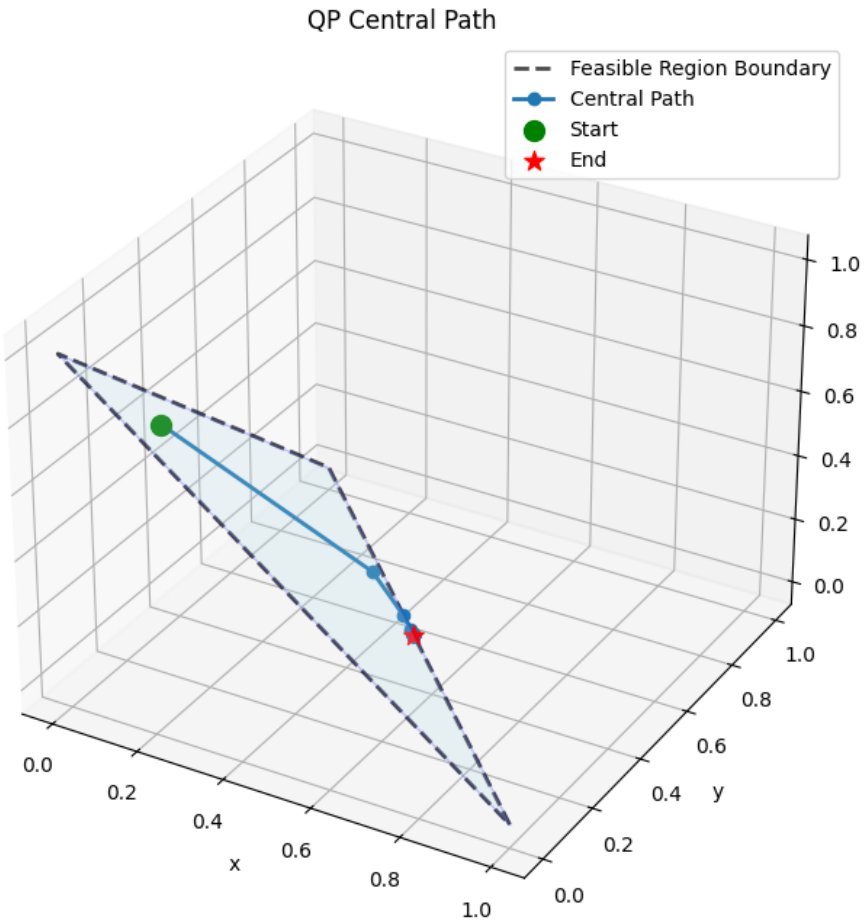
Objective: 1.500000000000052

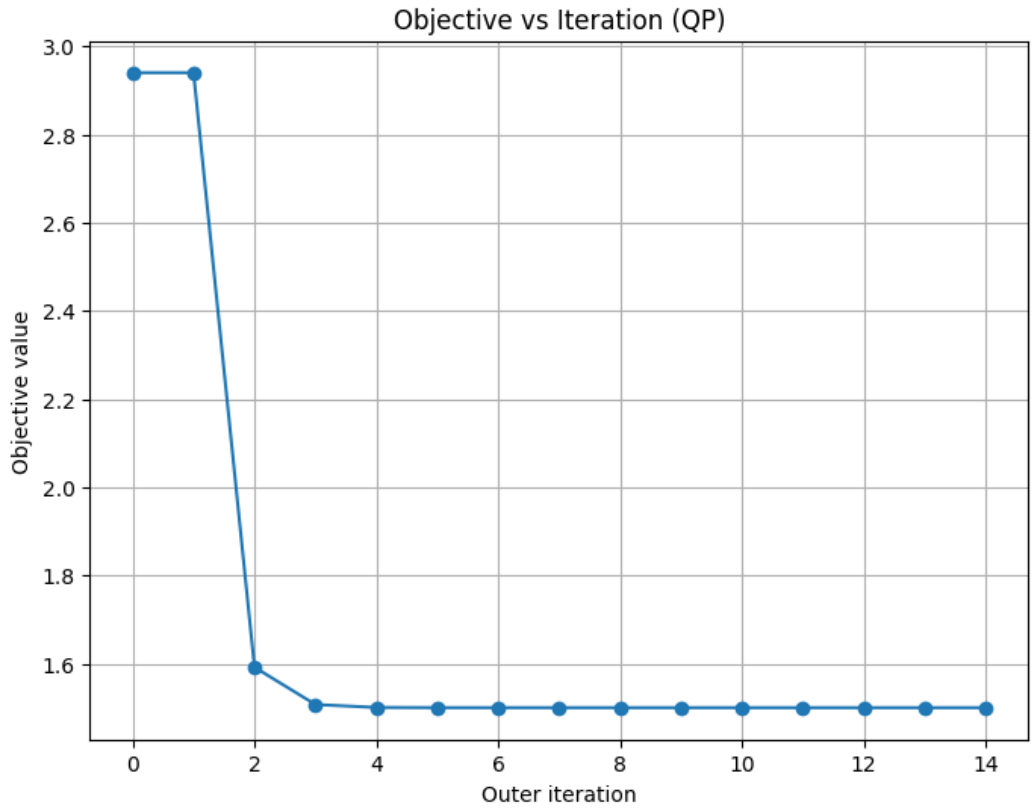
Equality constraint (Ax = b): [-2.22044605e-16]

Ineq 0: -0.4999998498598121

Ineq 1: -0.5000001501401806

Ineq 2: -7.099453176403091e-15





Test_LP:

LP solution: [2. 1.]

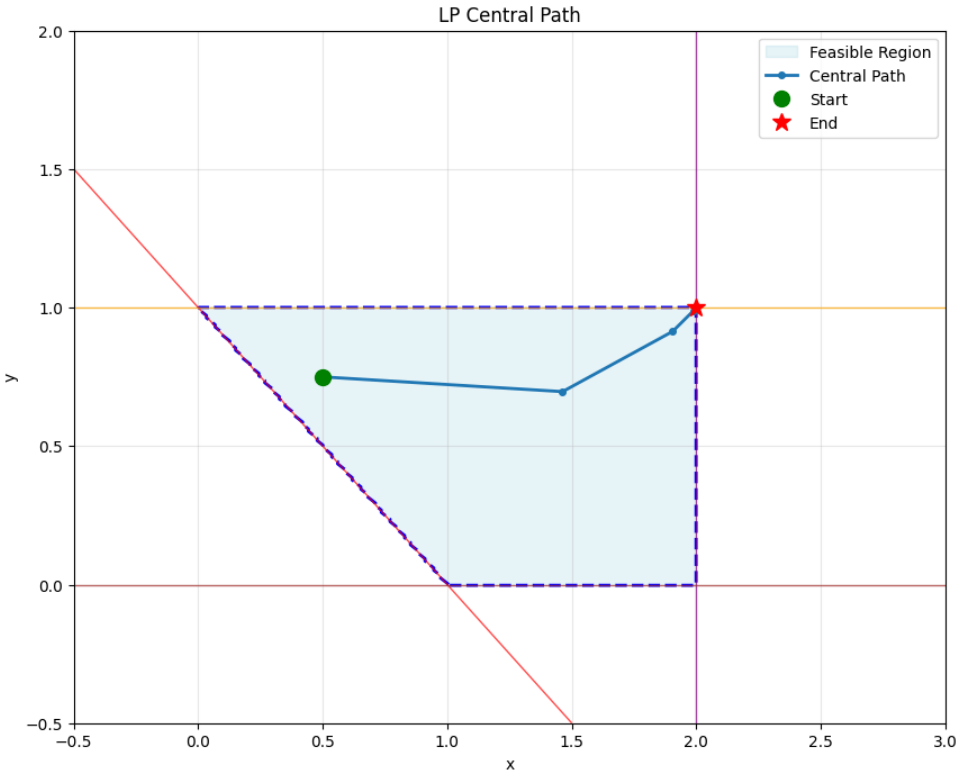
Objective: -2.999999999999611 → **Negative** of objective as we were asked to maximise, but our solver minimises. Similarly, inequalities are negative of originals.

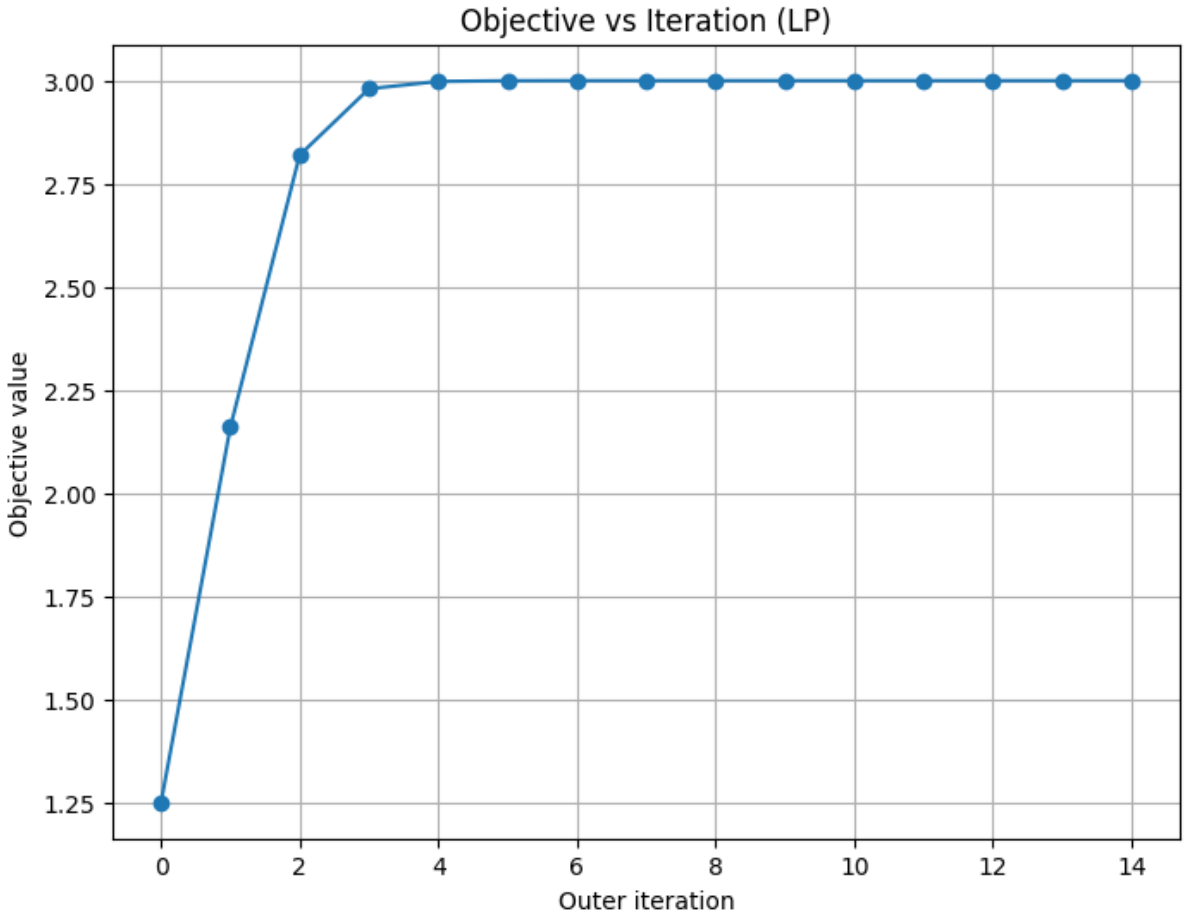
Ineq 0: -1.999999999999611

Ineq 1: -1.9451107391432743e-13

Ineq 2: -1.9451107391432743e-13

Ineq 3: -0.9999999999998055


LP Central Path
Feasible Region
Central Path
Start
End
2.0
1.5
1.0
0.5
0.0
−0.5
y
−0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
x


Objective vs Iteration (LP)
Objective value
3.00
2.75
2.50
2.25
2.00
1.75
1.50
1.25
0
2
4
6
8
10
12
14
Outer iteration